UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,396	09/29/2000	Brian James Martin	55,045 (158)	9210

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EXAMINER
TANG, KENNETH

ART UNIT	PAPER NUMBER
2127	

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _02 April 2001_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-29_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-29_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _5_.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-29 are presented for examination.

Claim Objections

2.   Claim 23 is objected to because of the following informalities: A semicolon is missing at

the end of line 4 on page 28. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 1-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention:

a.   Claim 1 recites the limitation "partition" in line 4. There is insufficient antecedent

basis for this limitation in the claim.

b.   In claim 1, the term "touched" is indefinite (lines 7, 9, and 13) because it is not

made explicitly clear how a data set can "touch" a path.

c.   Claim 1 recites the limitation "the locking requirements" in line 11. There is

insufficient antecedent basis for this limitation in the claim.

d.   The term "some" in claim 1 is a relative term which renders the claim indefinite.

The term "some" is not defined by the claim, the specification does not provide a

standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

e.   Claim 5 recites the limitation "the overall performance" in page 23, line 14. There is insufficient antecedent basis for this limitation in the claim. In addition, the term is indefinite because it is not made specifically clear what the performance is based on.

f.   Claim 11 recites the limitation "partition" in line 16. There is insufficient antecedent basis for this limitation in the claim.

g.   Claim 11 recites the limitation "the locking requirements" in page 24, line 17. There is insufficient antecedent basis for this limitation in the claim.

h.   In claim 11, the term "touched" is indefinite (page 25, lines 3, 5, and 9) because it is not made explicitly clear how a data set can "touch" a path.

i.   The term "some" in claim 11 is a relative term which renders the claim indefinite. The term "some" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

j.   Claim 14 recites the limitation "the overall performance" in page 25 (last line). There is insufficient antecedent basis for this limitation in the claim. In addition, the term is indefinite because it is not made specifically clear what the performance is based on.

k.   Claim 17 recites the limitation "partition" in line 15. There is insufficient antecedent basis for this limitation in the claim.

l.   The term "some" in claim 17 is a relative term which renders the claim indefinite. The term "some" is not defined by the claim, the specification does not provide a

standard for ascertaining the requisite degree, and one of ordinary skill in the art would

not be reasonably apprised of the scope of the invention.

m.   Claim 17 recites the limitation "the locking requirements" in page 26, line 17.

There is insufficient antecedent basis for this limitation in the claim.

n.   Claim 17 recites the limitation "the touching" in page 26, line20. There is

insufficient antecedent basis for this limitation in the claim.

o.   In claim 17, the term "touching" is indefinite (page 26, line 20) because it is not

made explicitly clear how data items are "touching" paths.

p.   Claim 23 recites the limitation "partition" in line 5. There is insufficient

antecedent basis for this limitation in the claim.

q.   The term "some" in claim 23 is a relative term which renders the claim indefinite.

The term "some" is not defined by the claim, the specification does not provide a

standard for ascertaining the requisite degree, and one of ordinary skill in the art would

not be reasonably apprised of the scope of the invention.

r.   Claim 23 recites the limitation "the locking requirements" in page 28, lines 7 and

11. There is insufficient antecedent basis for this limitation in the claim.

s.   In claim 23, the term "touching" is indefinite (page 28, line 10) because it is not

made explicitly clear how data items are "touching" paths.

t.   Claim 23 recites the limitation "the overall performance" in page 28, line 12.

There is insufficient antecedent basis for this limitation in the claim. In addition, the term

is indefinite because it is not made specifically clear what the performance is based on.

u.   Claim 25 recites the limitation "partition" in line 4. There is insufficient

antecedent basis for this limitation in the claim.

v.   In claim 25, the term "touched" is indefinite (page 29, lines 7, 9, and 13-15)

because it is not made explicitly clear how a data set can "touch" a path.

w.   The term "some" in claim 25 is a relative term which renders the claim indefinite.

The term "some" is not defined by the claim, the specification does not provide a

standard for ascertaining the requisite degree, and one of ordinary skill in the art would

not be reasonably apprised of the scope of the invention.

x.   Claim 25 recites the limitation "the locking requirements" in page 29, line 11.

There is insufficient antecedent basis for this limitation in the claim.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

1.   Claim 23 is provisionally rejected under the judicially created doctrine of obviousness-

type double patenting as being unpatentable over claim 5 of copending Application No.

09/751659 in view of Lomet (US 5,596,754). Although the conflicting claims are not identical,

they are not patentably distinct from each other because both computer systems comprise

substantially the same elements, such as determining methodology, creating N locks, and

modifying the locking requirements. The differences between the parent application and this

case are the claimed partitions.   However, Lomet teaches data lock management and that using

locks for partitions is well known *(col. 1, lines 34-35 and lines 40-57).* It would have been

obvious to one of ordinary skill in the art at the time the invention was made to combine the

feature of partitioning, having locks for the partitions, and management of the partition locks

because it increases the control of data accessing/sharing.

2.   This is a <u>provisional</u> obviousness-type double patenting rejection because the conflicted

claims have not in fact been patented as.

Claims 1-22 and 25-29 are rejected as a provisional obvious-type double patenting rejection as

applied to claim 5 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Zolnowsky (US 5,826,081) in view of Lomet (US 5,596,754).

5.   As to claim 1, Zolnowsky teaches a method for reducing contention of a highly

contended software lock protecting data items of a data set, all of the data items being stored in a

system memory of a multi-processor computer system, said method comprising the steps of:

-      creating N partition locks, where N > 2 *(col. 6, lines 28-42)*;

-      identifying one code path from one or more code paths of a software program that access

       one or more of the data items *(col. 6, lines 42-60)*;

-      determining which data items of the data set are touched by the identified code path *(col.*

       6, lines 42-60);

-      partitioning at least some of the data items that are touched by the identified code path

       (col. 6, lines 28-42); and

-      optimizing the locking requirements of the identified code path so the locks being

       acquired and released in the identified code path are those associated with the data items

       being touched by the identified code path *(see Abstract and col. 6, lines 28-42)*.

Zolnowsky fails to explicitly teach the locks being locks for partitions and the partitioning of at

least some of the data items that are touched by the identified code path. However, Lomet

teaches data lock management and that using locks for partitions is well known *(col. 1, lines 34-*

35 and lines 40-57). It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the feature of partitioning, having locks for the partitions, and

management of the partition locks because it increases the control of data accessing/sharing.

6.   As to claim 2, Zolnowsky teaches the method comprising the step of modifying the

locking requirements of the one or more code paths of the software program that access one or

more of the data items so as to acquire all N partition locks and the global lock where a global

lock would have been acquired prior to accessing of the one or more data items and so as to

release all N partition locks and the global lock where a global lock would have been released

after accessing of the one or more data items *(see Abstract and col. 6, lines 28-42)*.

7.   As to claim 3, Zolnowsky teaches the method wherein the identified code path includes a

plurality of branches, and wherein said optimizing includes optimizing the locking requirements

of the identified code path so the locks being acquired and released in the code path are those

associated with the data items being touched by each branch of identified code path *(col. 2, lines

10-31 and see rejection of claim 1)*.

8.   As to claim 4, Zolnowsky teaches the method wherein said optimizing includes

optimizing the locking requirements of each branch of the identified code path so the locks being

acquired and released in each branch are those associated with the data items being touched by

said each branch *(col. 2, lines 10-31 and see rejection of claims 1 and 3)*.

9.   As to claim 5, Zolnowsky teaches the method further comprising the step of evaluating

the software program after said optimizing the locking requirements so as to determine if the

overall performance of the software program is acceptable *(col. 5, lines 45-58)*.

10.   As to claim 6, Zolnowsky teaches the method wherein in the case where said evaluating

determines that the overall performance of the software program is not acceptable, then said

method includes identifying another code path of the one or more code paths and repeating said

steps of determining, partitioning, optimizing, and evaluating for the another identified code path

(col. 5, lines 45-58).

11.   As to claim 7, Zolnowsky teaches the method according to claim 1, further comprising

the step of first determining a methodology for partitioning the data set *(col.1, lines 24-47)*.

12.   As to claims 8 and 9, Zolnowsky fails to explicitly teach the method wherein the code

path first identified is the heaviest used code path and wherein the another code path and

subsequent code paths are identified sequentially in the direction from the heaviest used code

path to a lesser used path. However it is well known and obvious to one of ordinary skill in the

art to identify code paths from heaviest used to lesser used because this would be an obvious

sequence for optimization.

13.   As to claim 10, Zolnowsky teaches the method wherein there is one of a plurality or a

multiplicity of code paths that access one or more of the data items *(col. 6, lines 28-42)*.

14.   As to claim 11, it is rejected for the same reasons as stated in the rejection of claim 1. In

addition, Lomet teaches a methodology for partitioning the data set, accomplished by a lock

manager, *(col.1, lines 24-47)* and Zolnowsky teaches modifying locking requirements *(col. 5,

lines 45-58)*.

15.   As to claim 12, it is rejected for the same reasons as stated in the rejection of claim 3.

16.   As to claim 13, it is rejected for the same reasons as stated in the rejection of claim 4.

17.   As to claim 14, it is rejected for the same reasons as stated in the rejection of claim 5.

18.   As to claim 15, it is rejected for the same reasons as stated in the rejection of claim 6.

19.   As to claim 16, it is rejected for the same reasons as stated in the rejection of claim 9.

20.   As to claim 17, it is rejected for the same reasons as stated in the rejection of claim 1.

21.   As to claim 18, it is rejected for the same reasons as stated in the rejection of claim 4. In addition, Zolnowsky teaches modifying locking requirements *(col. 5, lines 45-58)*.

22.   As to claim 19, it is rejected for the same reasons as stated in the rejection of claim 5.

23.   As to claim 20, it is rejected for the same reasons as stated in the rejection of claim 6.

24.   As to claim 21, it is rejected for the same reasons as stated in the rejection of claim 7.

25.   As to claim 22, it is rejected for the same reasons as stated in the rejection of claim 10.

26.   As to claim 23, it is rejected for the same reasons as stated in the rejection of claim 11. In

addition, Zolnowsky teaches evaluating the software program after said modifying the locking

requirements so as to determine if the overall performance of the software program is acceptable

(col. 5, lines 45-58).

27.   As to claim 24, it is rejected for the same reasons as stated in the rejection of claim 6.

28.   As to claim 25, it is rejected for the same reasons as stated in the rejection of claim 1. In

addition, Zolnowsky teaches locking the data items of the data set that are touched by the

identified code path while keeping unlocked the data items of the data set that are not being

touched by the identified code path, accessing one or more of the locked data items, and

releasing the locks associated with the locked data *(col. 6, lines 33-42 and col. 9, line 18).*

29.   As to claim 26, it is rejected for the same reasons as stated in the rejection of claim 2.

30.   As to claim 27, it is rejected for the same reasons as stated in the rejection of claim 2.

31.   As to claim 28, it is rejected for the same reasons as stated in the rejection of claim 8.

32.   As to claim 29, Zolnowsky teaches the method wherein locking requirements for a

plurality of code paths are optimized, and wherein said acquiring, accessing and releasing are

selectively effected in any one of the plurality of code paths provided that the data items to be

locked in said any one code path are not locked in any other of the plurality of code paths *(see*

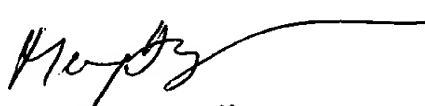*Abstract and col. 6, lines 28-42).*

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kenneth Tang whose telephone number is (703) 305-5334. The

examiner can normally be reached on 8:30AM - 7:00PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (703) 305-9678. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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